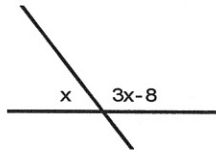


Key

Mid-term Review 2012-13

1. In the diagram, what is the value of x ?



$$\begin{aligned} x + 3x - 8 &= 180 \\ 4x - 8 &= 180 \\ 4x &= 188 \end{aligned}$$

$x = 47$

2. $\angle A$ and $\angle B$ are supplementary. $m\angle B$ is three times $m\angle A$. What is $m\angle A$?

$$x + 3x = 180$$

$$4x = 180 \quad x = 45$$

3x

x

$m\angle A = 45^\circ$

3. $m\angle BAC = 29^\circ$ and $m\angle BAD = 61^\circ$, so $\angle BAC$ and $\angle BAD$ are ...

$$29 + 61 = 90^\circ$$

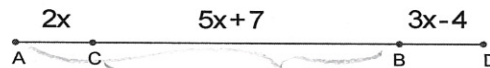
Complementary

4. In the diagram, $\overline{AB} \cong \overline{CD}$. Find BD.

$$\begin{aligned} AB &= 7x + 7 \\ CD &= 8x + 3 \end{aligned}$$

$$7x + 7 = 8x + 3$$

$4 = x$

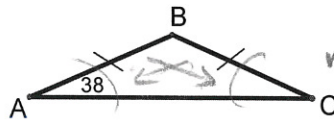


$$BD = 3(4) - 4 = 8$$

5. If two lines DO NOT intersect and ARE NOT in the same plane, then they must be ...

Skew

6. What is $m\angle B$?



$$m\angle C = 38^\circ$$

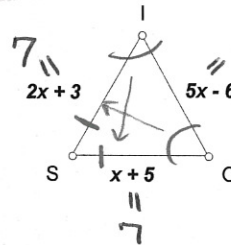
so $m\angle B = 104^\circ$

7. If two planes intersect, their intersection is a(n) ...

line

8. In $\triangle ISO$, $\angle I \cong \angle O$. What is the perimeter of $\triangle ISO$?

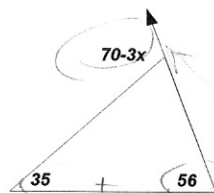
Perimeter = 18



$$\begin{aligned} 2x + 3 &= x + 5 \\ x &= 2 \end{aligned}$$

9. Solve for x .

Ext. \angle thm



$$70 - 3x = 35 + 56$$

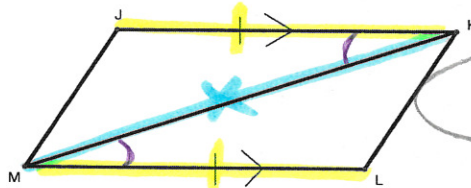
$$70 - 3x = 91$$

$$-3x = 21$$

$x = -7$

10. Why is $\triangle JKM \cong \triangle LMK$?

All parts are \cong when lines are \parallel .

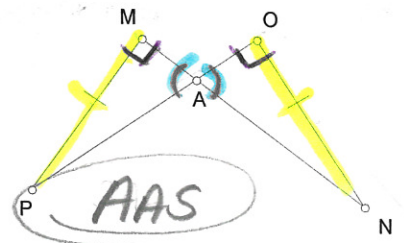


SAS

11. If two angles of one triangle are congruent to two angles of another triangle, then the remaining corresponding angles are:

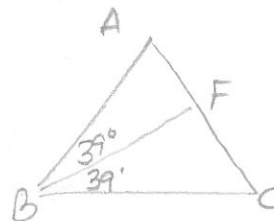
\cong

12. Which of the following theorems can be used to prove $\triangle MAP \cong \triangle OAN$?



AAS

13. In $\triangle ABC$, \overline{BF} is an angle bisector and $m\angle ABF = 39^\circ$, what is $m\angle ABC$?
(Hint: Draw the triangle and label)



$$m\angle ABC = 78^\circ$$

14. If a triangle has NO congruent sides, then the triangle is ...

Scalene

15. If point D is between A and C, then ...



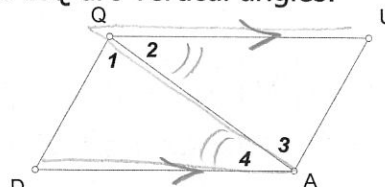
- A. \overrightarrow{DA} and \overrightarrow{DC} are opposite rays
B. \overrightarrow{CA} and \overrightarrow{CD} are opposite rays
C. \overrightarrow{AD} and \overrightarrow{DC} are opposite rays
D. \overrightarrow{DA} and \overrightarrow{CD} are opposite rays

16. $\angle P$ and $\angle Q$ are complementary and congruent. Which of the following must be true?

- A. $\angle P$ and $\angle Q$ are right angles.
B. $\angle P$ and $\angle Q$ are straight angles.
C. $\angle P$ and $\angle Q$ are each 45° .
D. $\angle P$ and $\angle Q$ are vertical angles.

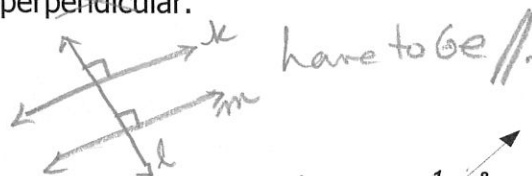
17. If $\overline{QU} \parallel \overline{DA}$, which pair of angles must be congruent?

$$\angle 2 \cong \angle 4$$



18. In a plane, any two lines perpendicular to the same line are perpendicular.

- A. Always
B. Sometimes
C. Never



19. Name all pairs of vertical angles?

$$\angle 1, \angle 7; \angle 2, \angle 8; \angle 3, \angle 5; \angle 4, \angle 6$$

20. If $m\angle 8 = 65^\circ$, what is the measure of all the other angles?

$$m\angle 8 = m\angle 2 = m\angle 6 = m\angle 4 = 65^\circ; m\angle 1 = m\angle 7 = m\angle 3 = m\angle 5 = 115^\circ$$

Use for problems 19 - 22.

21. If $m\angle 7 = (2x + 30)^\circ$ and $m\angle 5 = (3x - 10)^\circ$, then what is $m\angle 4$?

$$\text{CORRESPONDING} \Rightarrow \cong \quad \text{So } 2x + 30 = 3x - 10 \quad 40 = x$$

22. If $m\angle 2 = (4x + 30)^\circ$ and $m\angle 3 = (x + 40)^\circ$, then what is $m\angle 1$?

$$\text{S.O.S. } m\angle 2 + m\angle 3 = \text{Supp} \quad \text{So } 4x + 30 + x + 40 = 180 \quad 5x + 70 = 180 \quad 5x = 110 \quad x = 22$$

23. What is $m\angle RQS$?

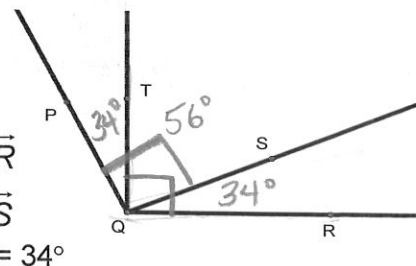
$$34^\circ$$

24. What is $m\angle PQR$?

$$124^\circ$$

25. Which geometric figure has only one endpoint?

Ray



$\overline{QT} \perp \overline{QR}$
 $\overline{QP} \perp \overline{QS}$
 $m\angle PQT = 34^\circ$

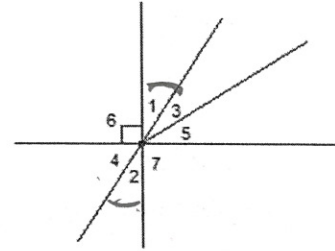
Use for problems 23 - 24.

skip hypothesis & conclusion

26. What is the converse of "If I have been doing my homework this semester, then I will not fail this test."

IF I DO NOT FAIL THE TEST THEN I HAVE BEEN DOING MY HW THIS SEMESTER.

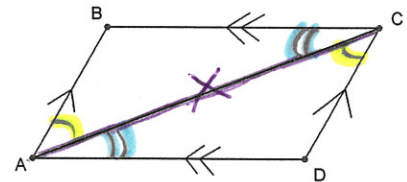
27. In the diagram, $\angle 1 \cong \angle 2$. Which of the following is NOT true?



- A. $\angle 3 \cong \angle 4$
- B. $m\angle 7 + m\angle 2 + m\angle 4 = 180^\circ$
- C. $m\angle 3 + m\angle 5 = m\angle 4$
- D. $\angle 4$ is complementary to $\angle 2$

28. Which statement correctly describes the congruence of the triangles in the diagram?

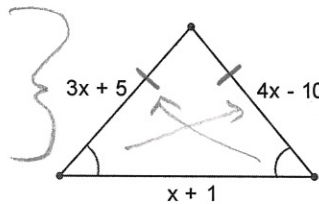
ASA



29. What is the value of x ?

$x = 15$

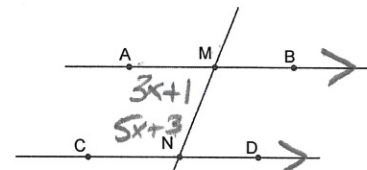
30. What is the measure of $\angle XYZ$?



$3x + 5 = 4x - 10$
 $15 = x$

31. In the diagram, $\overline{AB} \parallel \overline{CD}$, $m\angle AMN = 3x + 1$, and $m\angle CNM = 5x + 3$. Find $m\angle AMN$.

S.Sint 4s

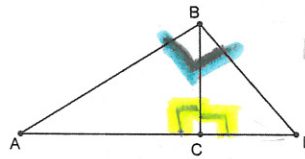


$3x + 1 + 5x + 3 = 180$
 $8x + 4 = 180$
 $8x = 176$
 $x = 22$

$m\angle AMN = 3(22) + 1 = 67^\circ$

$\triangle ABD$ is a right triangle with hypotenuse \overline{AD}

$BC \perp AD$



32. Which angle is NOT a right angle?

NON RT. \angle s $\Rightarrow \angle A, \angle D, \angle ABC$ OR $\angle CBD$

33. If two angles form a linear pair, then they are ... Supplementary.

34. Which is NOT a way to prove triangles are congruent?

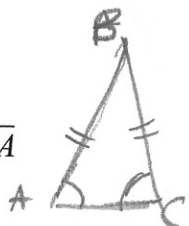
- A. SAS
- B. ASA
- C. SSA
- D. SSS

35. Which of the following is NOT an undefined term in geometry?

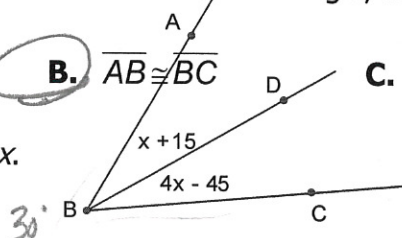
- A. Line
- B. Plane
- C. Point
- D. Ray

36. If $\triangle ABC$ is isosceles with $\angle B$ as the vertex angle, then

- A. $\overline{AC} \cong \overline{BC}$
- B. $\overline{AB} \cong \overline{BC}$
- C. $\overline{AC} \cong \overline{BA}$
- D. $\overline{AC} \cong \overline{BC} \cong \overline{BA}$



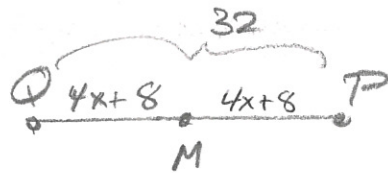
37. $m\angle ABC = 30^\circ$ Find x .



$x + 15 + 4x - 45 = 30$
 $5x - 30 = 30$
 $5x = 60$
 $x = 12$

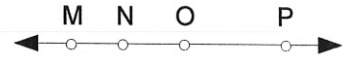
$$8x + 16 = 32$$

$$8x = 16 \quad x = 2$$



38. M is the midpoint of \overline{QP} , $QM = 4x + 8$, and $QP = 32$. Find x .

39. Refer to drawing. Which of the following rays does not contain point N?



A. \overrightarrow{PO}

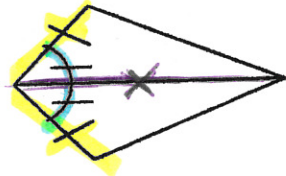
B. \overrightarrow{OM}

C. \overrightarrow{MP}

D. \overrightarrow{OP}

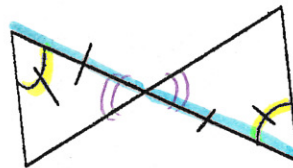
40. Why are the following two triangles congruent?

SAS



41. Why are the following two triangles congruent?

ASA



vertical angles

42. Calculate the slope of the line containing the points $X(-4, 3)$ and $Y(1, -3)$.

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-3 - 3}{1 - (-4)} = \frac{-6}{5} = -\frac{6}{5}$$

43. Which line would be perpendicular to $y = 4x - 5$.

opposite reciprocal slopes

A. $y = 4x + 3$

B. $y = -\frac{1}{4}x + 17$

C. $y = -4x - 12$

D. $y = -5$

44. The graph of the line containing the points $(5, 8)$ and $(-6, 8)$ can best be described as $m = \frac{8 - 8}{-6 - 5} = \frac{0}{-11} = 0$

A. Rising

B. Falling

C. Horizontal

D. Vertical

$m = 0$
HOY

45. The graph of the line containing the points $(-3, -4)$ and $(-3, -9)$ can best be described as

A. Rising

B. Falling

C. Horizontal

D. Vertical

$$m = \frac{-9 - (-4)}{-3 - (-3)} = \frac{-5}{0} = \text{undefined}$$

VUX